



Express Mail No. EU592640434US  
Case Docket No. CHR 01-34

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: G. F. Hutter and C. K. Stebbins

Serial No.: 09/803,829

Group Art Unit: 1774

Filed: March 12, 2001

For: Cationic Colloidal Dispersion Polymers For Ink Jet Coatings

Examiner: Tamra Dicus

#11  
K10  
S-23-05

Honorable Commissioner of  
Patents and Trademarks  
Alexandria, VA 22313-1450

REQUEST FOR SUSPENSION OF ACTION  
UNDER 37 C.F.R. § 1.103(c)

Dear Sir:

In accordance with the Request for Continued Examination under 37 C.F.R. 1.114, applicants respectfully requests a suspension of action under 37 C.F.R. § 1.103(c) for a period of three (3) months for above-identified application. A Fee Transmittal Sheet is enclosed and the commissioner is hereby authorized to charge or credit the deposit account for the fee set forth in 37 C.F.R. §1.17 (i) in the amount of \$130.00 for filing this extension.

Respectfully submitted,

Daniel B. Reece IV  
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### SUBMISSION WITH REPLY TO OFFICE ACTION

In the Final Office Action mailed December 12, 2002, claims 1-12 were rejected under 35 USC §102(b) as being anticipated by U.S. Patent No. 5,521,229 to Lu et al ("Lu"). The rejection is respectfully traversed.

It is respectfully submitted that the structure of the product produced by the Applicants' process is radically different from the polymer composite taught and claimed by Lu.

It is important to note that the Applicants teach and claim a **two-step process**. In the **first step** (as represented here by Claim 1 of the Application), a mixture comprising:

- (1) about 1.0% to about 25.0% by total weight of the mixture of a member selected from the group consisting of amine-containing ethylenically unsaturated monomers and combinations thereof;
- (2) about 10.0% to about 50.0% by total weight of the mixture of a member selected from the group consisting of acrylic esters of alcohols containing from 1 to 22 carbon atoms, methacrylic esters of alcohols containing from 1 to 22 carbon atoms, styrene, substituted styrenes, acrylonitrile, methacrylonitrile, vinyl chloride, vinylidene chloride, vinyl ethers, vinyl esters, N-vinyl amides, and combinations thereof;
- (3) up to about 8.0% by total weight of the mixture of a member selected from the group consisting of ethylenically unsaturated monomers containing at least one quaternary ammonium group and combinations thereof;
- (4) up to about 8.0% by total weight of the mixture of a member selected from the group consisting of ethylenically unsaturated monomers containing at least one hydroxyl group and combinations thereof;
- (5) up to about 8.0% by total weight of the mixture of a member selected from the group consisting of N-hydroxymethyl acrylamide, N-hydroxymethyl methacrylamide, N-hydroxymethyl-substituted acrylamide, N-hydroxymethyl-substituted methacrylamide, and combinations thereof;
- (6) up to about 4.0% by total weight of the mixture of a chain transfer agent;
- (7) about 0.5% to about 8.0% by total weight of the mixture of a surfactant selected from the group consisting of nonionic surfactants, cationic surfactants, and combinations thereof;
- (8) a catalytic amount of polymerization initiator; and
- (9) the balance of the mixture being water;

is reacted in a free radical polymerization reaction to produce **emulsion polymerization products** having a solids content in the range of about 25.0% to about 50.0%. As Dr. Gamini S.

Samaranayake and Dr. Thomas M. Sisson state in their accompanying Declarations under 37 CFR §

1.132, one skilled in the art would recognize that the reaction products which invariably result from the emulsion polymerization reaction of the reactants taught by the Applicants in the amounts taught by the Applicants are **latexes**. Indeed, the Applicants specifically teach that these emulsion polymerization products are latexes (see: p. 6, line 26; p. 8, line 29; p. 9, line 1; p. 10, line 24; p. 11, line 18; p. 12, line 9; p. 13, line 22; lines 1 and 22).

A latex is a stable dispersion of polymer particles in water (see the Polymer Chemistry reference submitted in the accompanying Information Disclosure Statement). As noted by Dr. Samaranayake and Dr. Sisson, a skilled artisan would understand that, due to the chemical characteristics and the amounts of the reactants employed by the Applicants in their emulsion polymerization process, the process taught and claimed by the Applicants would invariably produce latexes which contain polymer particles having a size in the range of **about 35 to about 200 nm** (see the Encyclopedia of Chemical Technology reference and The Role of Surfactants in Emulsion Polymerization reference submitted in the accompanying Information Disclosure Statement).

The **second step** of the Applicants' process is one of **pH adjustment** (i.e., neutralization). In this step, the emulsion polymerization products (i.e., the latexes) are adjusted to have a pH in the range of about 3.5 to about 7.0 to produce the products taught and claimed by the Applicants, namely cationic acrylic **colloidal dispersion** polymer compositions. The pH adjustment neutralizes the basic functionalities contained in the polymer particles of the latex, thereby causing the polymer particles to swell and loose their discreteness (see: p. 3, line 25 – p. 4, line 1; p. 6, lines 10-12; p. 10, lines 25-27). This neutralization transforms the latexes into colloidal dispersions. As noted by Dr. Samaranayake and Dr. Sisson, a skilled artisan would understand that the pH adjustment process taught and claimed by the Applicants' would invariably produce one-phase homogeneous colloidal dispersion products. That is, the emulsion polymerization products taught by the Applicants would, upon neutralization, produce a polymer that is molecularly dispersed in a single liquid phase. *contradict*

In contrast, Lu teaches **one-step** process. What Lu teaches and claims is the photoinitiated polymerization of a microemulsion to produce a polymer composite having a bicontinuous structure. As stated by Dr. Samaranayake and Dr. Sisson, and as taught by Lu (col. 1, lines 29-33), one skilled in the art would recognize that a microemulsion is composed of spherical droplets having a size of about 10 nm (see the Ullmann's Encyclopedia of Industrial Chemistry reference and the The Role of

Surfactants in Emulsion Polymerization reference submitted in the accompanying Information Disclosure Statement). Lu teaches and claims the subjection of the microemulsion to a rapid photoinitiated polymerization that produces a polymer composite comprising two solid phases having domain sizes in the order of 10 nm. It is important to note that the polymer composites taught and claimed by Lu are **solid products** (see: col. 3, lines 1-8, 22-27, and 58-60; col. 4, lines 1-42; col. 11, lines 15-16; col. 22, lines 26-34), while the Applicants teach and claim **colloidal dispersion polymer compositions**. As stated by Dr. Samaranayake and Dr. Sisson, a skilled artisan would understand that the polymer composites taught by Lu are different products which have significantly different chemical properties than the colloidal dispersion polymer compositions taught by the Applicants.

It is well established that, in order for anticipation to be found under 35 USC §102(b), there must be identity of invention. As the court held in *Glaverbel Societe Anonyme v. Northlake Marketing & Supply Inc.*, 45 F. 3d 1550, 33 U.S.P.Q. 2d 1496, 1498 (Fed. Cir. 1995):

The claimed invention, as described in appropriately construed claims, must be the same as that of the reference in order to anticipate.

Likewise, as the court stated in *Ultradent Product Inc. v. Life-Like Cosmetics Inc.*, 39 U.S.P.Q. 2d 1969, 1980 (Utah 1996):

[A]ny degree of physical difference, however slight, invalidates claims of anticipation.

As noted by Dr. Samaranayake and Dr. Sisson, a skilled artisan would recognize that there is a significant difference between a colloidal dispersion and a solid, and that the colloidal dispersion polymer composition products taught and claimed by the Applicants are not the same as the solid polymer composite products taught and claimed by Lu. It is, therefore, respectfully submitted that claims 1-12 of the present application are not anticipated by Lu.

In response to the Applicant's arguments filed October 15, 2002 (which are hereby incorporated by reference), the Final Office Action stated (p. 8-9) that:

In response to Applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the structure of the polymer and the phases) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir.

1993). Applicant further urges that Lu's purpose is to produce a two solid substantially nonporous bicontinuous phases, consisting of two phases and that Lu teaches a hydrophobic phase, while the Applicants claim a one phase homogenous cationic acrylic colloidal dispersion polymer composition. Independent claim 1 simply does not state what phase if any, the polymer is, or its structure.

It is respectfully submitted that this basis for rejection is incorrect, in that the Applicants' specifically teach and claim cationic acrylic **colloidal dispersion** polymer compositions. As noted above, one skilled in the art would recognize that the Applicants' products are one-phase homogeneous colloidal dispersions and are significantly different from the products taught and claimed by Lu.

At p. 5 of the Final Office Action, it was stated that:

Applicant argues that Lu produces a microemulsion and not an emulsion. However, this position is not in any way persuasive. Applicant's independent claim 1 merely states "an emulsion", **never** specifying what type of emulsion. Therefore, it is the position of the Examiner that the term "emulsion" encompasses the term "microemulsion" and hence is taught and anticipated by Lu.

This is respectfully traversed.

As noted above, the first step of the Applicants process is the polymerization reaction of a mixture to produce **emulsion polymerization** products (latexes) having a solids content in the range of about 25.0% to about 50.0%. In contrast, Lu teaches and claims the photoinitiated polymerization of a **microemulsion** to produce a polymer composite having a bicontinuous structure. As noted by Dr. Samaranayake and Dr. Sisson, a skilled artisan would recognize that the Applicants do not teach, suggest, or even hint at the production of a microemulsion.

Lu specifically teaches (col. 1, lines 23-55) that:

Microemulsions are water-oil colloidal dispersions stabilized by an appropriate mixture of surface-active agents (**usually a surfactant** such as a soap **and a cosurfactant** such as a short chain alcohol). By contrast with conventional milky emulsions, for which the stability is of purely kinetic origin, microemulsions are thermodynamically stable and form spontaneously at contact. The small size of the spherical droplets (about 10 nm) dispersed in the continuous medium explains their optical transparency (Encyclopedia of Polymer Science Engineering; Wiley: New York 1987, Vol. 9, p. 718, incorporated by reference herein). (emphasis added)

In the earlier submitted Hypertext Guide to Terms in Colloid and Polymer Science reference, Dr. Adrian R. Rennie defines an “microemulsion” as being:

A colloidal dispersion of a liquid in another liquid (usually an oil and water) typically with a droplet size of a few nm. It is stabilised with **surfactants and cosurfactants**. In contrast to emulsions, microemulsions can be truly stable in a thermodynamic sense. (emphasis added)

As noted by Dr. Samaranayake and Dr. Sisson, one skilled in the art would recognize that it is critical that a microemulsion contain a certain level of surfactant, normally at least 30% by weight. The Applicants specifically teach and claim a level of surfactant of “from about 0.5% to about 8.0%, preferably from about 1.0% to about 5.0%, by weight of the total mixture employed to produce the emulsion polymer” (p. 8, lines 14-16; claims 1 and 2). As noted by Dr. Samaranayake and Dr. Sisson, a skilled artisan would recognize that **a microemulsion cannot be formed from an emulsion containing this level of surfactant**.

As noted in the Rejection, Lu teaches a surfactant level in the range of about 5% to about 70% by weight percent of the microemulsion. However, as stated by Dr. Samaranayake and Dr. Sisson, a skilled artisan would understand that at the lower levels of this surfactant range Lu **must employ a cosurfactant** in order for the emulsion to contain the level of surfactant necessary to form a microemulsion. These cosurfactants, which Lu calls “cosolvents,” are taught in the patent (col. 5, lines 32-43; col. 10, lines 1-13 and lines 30-36, claims 10 and 11).

It is, therefore, respectfully submitted that one skilled in the art would recognize that the “emulsion” taught and claimed by the Applicants would not encompass the term “microemulsion” taught and claimed by Lu. This is so stated in the accompanying Declarations by Dr. Samaranayake and Dr. Sisson.

At page 3 of the Final Office Action, it is stated that:

Lu teaches further comprising 0.01 to about 5 percent by weight of polymerization initiator of **either photo or thermal type**, which suffices applicant’s claim catalytic amount. See col. 1, line 23, col. 3, lines 30-60, col. 8, lines 5-62, and col. 9, lines 46-47. (emphasis added)

It is respectfully submitted that this is incorrect. For example, what Lu actually states at col. 9, lines 46-47 is:

These thermal initiators are only used as a supplement to photoinitiators, in the event there is concern for complete polymerization of the monomers.

Lu specifically teaches that thermal initiators may be optionally employed in addition to photoinitiators, but **photoinitiators must always be present**. The presence of photoinitiators is important because **the use of photoinitiated polymerization is critical to Lu's invention**. Indeed, Lu states (col. 4, lines 47-) that:

The method of polymerization is also important to the morphology of the resulting polymer composite. Rapid polymerization of both types of monomers is needed in order for the mixture to remain as a stable microemulsion during polymerization and for the resulting polymer composite to exhibit the structural integrity. Free radical polymerization using photoinitiators and electromagnetic radiation is a method to achieve rapid and controllable polymerization that allows the morphology of the microemulsion to "freeze" or remain stable and minimize phase separation of the microemulsion during polymerization resulting in a substantially nonporous polymer composite.

Lu further states (col. 5, lines 6-15) that:

Unexpectedly, use of a photoinitiated polymerization assures the formation of the desired substantially nonporous composite of the present invention. The photopolymerization method is quite reliable because it does not require an alteration of temperature to initiate polymerization, because polymerization is controllable (e.g., polymerization occurs only so long as electromagnetic radiation is delivered), and because photopolymerization minimizes phase separation of the microemulsion during photopolymerization.

Thus, it is photoinitiated polymerization that permits Lu to "freeze" the hydrophobic and hydrophilic phases of his microemulsion into a solid polymer composite having a substantially nonporous bicontinuous structure. This polymer composite is "two-phased" in that it would exhibit both the hydrophobic and hydrophilic natures of the microemulsion from which it was formed.

Page 9 of the Final Office Action states that:

Moreover, Lu does not solely teach a hydrophobic phase, Lu also teaches a hydrophilic phase in Example 17 and patented claim 9.

It is respectfully submitted that what the Applicants stated in the reply of October 15, 2002 was misunderstood. At p. 4 of that Reply the Applicants stated that:

As noted by Dr. Sisson, one skilled in the art would recognize that the Applicants' teach a one-phase homogeneous cationic acrylic colloidal dispersion polymer composition. This differs significantly from the two-phase bicontinuous polymer composite taught by Lu et al. Moreover, the Applicants' polymer composition is hydrophilic in nature and suitable for use with water-based ink jet coatings.

The Applicants' acknowledge that Lu teaches a two-phase bicontinuous polymer composite which contains both a hydrophobic phase and a hydrophilic phase. However, as noted by Dr. Samaranayake and Dr. Sisson, the hydrophobic phase of Lu's polymer composite would render it **unsuitable for use with water-based ink jet coatings**. This is because the hydrophobic phase in the polymer would repel the water-based ink, thereby resulting in ink mottle. In contrast, the one-phase homogeneous cationic acrylic colloidal dispersion polymer composition taught and claimed by the Applicants is suitable for use with water-based ink jet coatings, as the polymer contains only a hydrophilic phase (not a hydrophobic one).

It is also important to note that, as stated by Dr. Samaranayake and Dr. Sisson, it would be impractical – if not impossible – to employ photo-initiators in an emulsion polymerization to produce a latex. Emulsion polymerization is not compatible with photoinitiated polymerization, as it would be extremely difficult to get the needed photons into the inside of the micelles where the polymerization was occurring. As the Application notes (p. 8, lines 20-21), thermal or redox initiators are traditionally employed in the emulsion polymerization reaction taught and claimed by the Applicants.

Therefore, for the reasons noted above, it is respectfully submitted that claims 1-12 are not anticipated by U.S. Patent No. 5,521,229 to Lu, and withdrawal of the rejection is solicited.

Claims 1 and 13-18 stand rejected under 35 U.S.C. 103 as being unpatentable over U.S. Patent No. 5,521,229 to Lu et al. and further in view of 5,372,884 to Abe et al ("Abe"). The rejection is respectfully traversed.

In addition to the preceding comments regarding the Lu reference, the Applicants respectfully maintain that, as stated by Dr. Samaranayake and Dr. Sisson, the substantially nonporous and hydrophobic phase properties of Lu's polymer composites would teach those skilled in the art away from any attempted use of Lu's polymer composites as additives for water-based ink



jet coatings. As the court stated in *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 227 U.S.P.Q. 657 (Fed. Cir. 1985):

Consideration must be given to teachings in the references that would have led one skilled in the art away from the claimed invention. A claim cannot properly be used as a blueprint for extracting individual teachings from references.

It is believed that the Final Office Action is mute on the issue that the teachings contained in Lu would teach those skilled in the art away from any attempted use of Lu's polymer composites as additives for water-based ink jet coatings. The Final Office Action does maintain (p. 9) that motivation to combine the Lu and Abe references:

... exists since Lu does in fact teach using both hydrophobic or hydrophilic materials, see *especially* col. 3, lines 15-16 describing the inherent behavior of ink for coating on a substrate at col. 6, line 9, and Abe teaches employing a cationic composition comprising the **same** additives as Applicant claims.

This is respectfully traversed. What Lu states at col. 3, lines 9-16 is:

Such polymers with a substantially nonporous, bicontinuous structure would find utility especially in applications where the bulk properties of both hydrophilic and hydrophobic polymers are required simultaneously. For instance, a breathable film with high water vapor transport properties which is also **impermeable to water** and/or bacteria is highly desirable. Also, the entrapment, and slow release, of either hydrophobic or hydrophilic materials in such a polymer is possible. (emphasis added)

As stated by Dr. Samaranayake and Dr. Sisson, what the teachings contained here would perhaps fairly suggest to those skilled in the art is the potential use of Lu's polymer composites in a BAND-AID like device or in a drug-delivery system such as a nicotine patch (where the possible "entrapment and slow release of either hydrophobic or hydrophilic materials" might be useful). However, the bulk properties of both hydrophilic and hydrophobic polymers are not required simultaneously in ink jet receptive coatings. Moreover, the slow release of either hydrophilic or hydrophobic materials from a polymer is not a desired characteristic in ink jet receptive coatings. Also, an ink jet receptive coating must be water permeable – while Lu's polymer is not. What Lu does clearly teach are polymer composites that are substantially nonporous, water impermeable, and

which contain a hydrophobic phase. As noted above, the water impermeability and presence of this hydrophobic phase in Lu's polymer composite would lead those skilled in the art away from the use of the polymer composite as an ink jet receptive coating, as the hydrophobic phase would repel the water-based ink, thereby resulting in ink mottle.

What Lu states at col. 6, lines 4-19 is:

Transparent microemulsions form spontaneously on admixture of the components which make up the aqueous phase, the organic phase, and the surfactant in any order. The microemulsion is then cast into an appropriate mold and irradiated with electromagnetic radiation to effect rapid free-radical polymerization or it is coated onto a substrate and irradiated with electromagnetic radiation to effect rapid free-radical polymerization on the substrate, or it can be cast so as to encompass a sheet or mesh of reinforcing material, such as a scrim, etc., then irradiated with electromagnetic radiation to effect rapid free-radical polymerization. In each alternative, "rapid" means that polymerization occurs in a manner that does not substantially alter the morphology of the microemulsion during polymerization, such that a substantially nonporous, bicontinuous structure in the polymer composite results.

What Lu teaches here is that the microemulsion can be coated onto a substrate prior to the photoinitiation (that triggers a "rapid" polymerization which, as discussed above, "freezes" the morphology of the microemulsion to produce the substantially nonporous, bicontinuous structure of the polymer composite). As stated by Dr. Samaranayake and Dr. Sisson, the mere fact that Lu's microemulsion can be coated on a substrate prior to its polymerization would not alter the physical characteristics of the polymer composite which makes the composite unsuitable for use as an ink jet receptive coating. As the court stated in *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 230 U.S.P.Q. 416 (Fed. Cir. 1986):

It is impermissible within the framework of 35 U.S.C. §103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art.

As noted by Dr. Samaranayake and Dr. Sisson, for the reasons stated above it is respectfully submitted that Lu does not teach, suggest, or even hint at the use of his polymeric composites in the formulation of ink jet receptive coatings.

Abe teaches and claims the use of colloidal silica which has been coated with a cation-

modifier, preferably at least one hydrous metal oxide selected from the group consisting of hydrous aluminum oxide, hydrous zirconium oxide, and hydrous tin oxide (col. 2, lines 48-55, claims 1 and 2). As noted by Dr. Samaranayake and Dr. Sisson, a skilled artisan would understand that Abe's compounds are pigment-like in nature. Moreover, these compounds are significantly different from the ink jet receptive coatings taught and claimed by the Applicants.

As stated by Dr. Samaranayake and Dr. Sisson, the teachings contained in Lu combined with the teachings contained in Abe would not teach or suggest to one skilled in the art the Applicants' process or the cationic acrylic colloidal dispersion polymer compositions produced by that process.

It is further respectfully submitted that, in the absence of the Applicants' teachings, there would be no suggestion or motivation to one skilled in the art to even attempt to combine the Lu and Abe references. It is, therefore, respectfully submitted that this attempted combination is the result of improper hindsight analysis. As the court stated in *W. L. Gore & Associates, Inc. v. Garlock, Inc.*, 220 USPQ 303 (1983):

To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references or record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.

Therefore, for the reasons stated, it is respectfully submitted that the claimed invention is patentable and that the claims are in condition for allowance. Such action by the Examiner is earnestly solicited.

If the Examiner believes, for any reason, that personal communication will expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Authorization was provided on the accompanying Request For Continued Examination (RCE) Transmittal sheet [Form PTO/SB/30 (01-03)] for the charging of the assignee's Deposit Account for the required fees for the Petition for Extension of Time under 37 CFR §1.136(a), the Request for Continued Examination (RCE) under 37 CFR §1.114, and the Request for Suspension of Action under 37 CFR §1.103(c). No additional fees are believed to be due in connection with this filing. However, should it be determined that additional fees are due and payable, the Commissioner

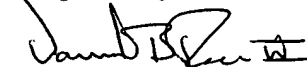
Express Mail No. EU592640434US

Serial No. 09/803,829

Case Docket No. CHR 01-34

is authorized to charge any required fees or credit any overpayment to the assignee's Deposit  
Account No. 23-1160.

Respectfully submitted,



Daniel B. Reece IV  
Attorney for the Applicant  
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Attachment

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Express Mail No.: EU592640434US

PTO/SB/17 (05-03)  
Approved for use through 04/30/2003. OMB 0651-0032  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**FEE TRANSMITTAL**  
**for FY 2003**

Effective 01/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27**TOTAL AMOUNT OF PAYMENT** (\$)**1290.00****Complete if Known**

Application Number	09/803,829
Filing Date	March 12, 2001
First Named Inventor	G. F. Hutter
Examiner Name	Tamra Dicus
Art Unit	1774
Attorney Docket No.	CHR 01-34

**METHOD OF PAYMENT (check all that apply)**☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☒ Deposit Account:

Deposit Account Number	23-1160
Deposit Account Name	MeadWestvaco Corporation

The Director is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments  
☐ Charge any additional fee(s) during the pendency of this application  
☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.
**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1001 750	2001 375	Utility filing fee	
1002 330	2002 165	Design filing fee	
1003 520	2003 260	Plant filing fee	
1004 750	2004 375	Reissue filing fee	
1005 160	2005 80	Provisional filing fee	
<b>SUBTOTAL (1)</b> (\$)			

**2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE**

Total Claims	Extra Claims	Fee from below	Fee Paid
Independent Claims	-20** =	X	
Multiple Dependent	-3** =	X	

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description
1202 18	2202 9	Claims in excess of 20
1201 84	2201 42	Independent claims in excess of 3
1203 280	2203 140	Multiple dependent claim, if not paid
1204 84	2204 42	** Reissue independent claims over original patent
1205 18	2205 9	** Reissue claims in excess of 20 and over original patent
<b>SUBTOTAL (2)</b> (\$)		

\*\*or number previously paid, if greater; For Reissues, see above

**FEE CALCULATION (continued)****3. ADDITIONAL FEES**

Large Entity Fee Code (\$)	Small Entity Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65	Surcharge - late filing fee or oath	
1052 50	2052 25	Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130	Non-English specification	
1812 2,520	1812 2,520	For filing a request for <i>ex parte</i> reexamination	
1804 920*	1804 920*	Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*	Requesting publication of SIR after Examiner action	
1251 110	2251 55	Extension for reply within first month	
1252 410	2252 205	Extension for reply within second month	
1253 930	2253 465	Extension for reply within third month	
1254 1,450	2254 725	Extension for reply within fourth month	
1255 1,970	2255 985	Extension for reply within fifth month	
1401 320	2401 160	Notice of Appeal	
1402 320	2402 160	Filing a brief in support of an appeal	
1403 280	2403 140	Request for oral hearing	
1451 1,510	1451 1,510	Petition to institute a public use proceeding	
1452 110	2452 55	Petition to revive - unavoidable	
1453 1,300	2453 650	Petition to revive - unintentional	
1501 1,300	2501 650	Utility issue fee (or reissue)	
1502 470	2502 235	Design issue fee	
1503 630	2503 315	Plant issue fee	
1460 130	1460 130	Petitions to the Commissioner	
1807 50	1807 50	Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180	Submission of Information Disclosure Stmt	
8021 40	8021 40	Recording each patent assignment per property (times number of properties)	
1809 750	2809 375	Filing a submission after final rejection (37 CFR 1.129(a))	
1810 750	2810 375	For each additional invention to be examined (37 CFR 1.129(b))	
1801 750	2801 375	Request for Continued Examination (RCE)	750.00
1802 900	1802 900	Request for expedited examination of a design application	
Other fee (specify) <u>Processing fee 1.17(i)</u>			130.00
*Reduced by Basic Filing Fee Paid			
<b>SUBTOTAL (3)</b> (\$)			<b>1290.00</b>

**SUBMITTED BY**

Name (Print/Type)	Daniel B. Reece	Registration No. (Attorney/Agent)	33,998	Telephone	(843) 746-8493
Signature	<i>Daniel B. Reece</i>	Date	May 12, 2003		

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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EXPRESS MAIL NO. EU592640434US  
Case Docket No. CHR 01-34

CERTIFICATE UNDER 37 C.F.R. 1.10(a)

I hereby certify that this correspondence is being deposited with the United States  
Postal Service as Express Mail in an envelope addressed to the Commissioner for Patents,  
Alexandria, VA 22313-1450, on May 12, 2003.

A handwritten signature in black ink, appearing to read "Daniel B. Reece IV".

---

Daniel B. Reece IV  
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